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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/826,228 | 04/16/2004 | Gregory Hogdal | MS1-671USC1 | 9654 |

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| EXAMINER | |
|---|---|
| MCCARTHY, CHRISTOPHER S | |
| **ART UNIT** | **PAPER NUMBER** |
| 2113 | |

DATE MAILED: 02/08/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 10/826,228 | HOGDAL ET AL. | |
| | Examiner | Art Unit | |
| | Christopher S. McCarthy | 2113 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *26 January 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-13 and 15-25* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *1-5,11-13 and 15-20* is/are allowed.

6)☒ Claim(s) *6-10 and 21-25* is/are rejected.

7)☒ Claim(s) *5* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *16 April 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☒ Other: *response to arguments*.

## DETAILED ACTION

1. Claims 1-13, 15-25 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-5, 8-12, 16-23, 25-30 of U.S. Patent No. 6,766,472. Although the conflicting claims are not identical, they are not patentably distinct from each other because it is well settled that the omission of an element and its function is an obvious expedient if elements perform the same function (In re Karlson, 136 USPQ 184 CCPA 1973), as cited in prior office action, which was mailed on 1/19/2006.

2. Claims 6-9, 21-25 are rejected under 35 U.S.C. 102(b) as being anticipated by Nesheim et al. U.S. Patent 5,897,664, as cited in prior office action, which was mailed on 1/19/2006.

3. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nesheim in view of Brandewie U.S. Patent 6,094,530.

4. Claims 1-5, 11-13, 15-20 are allowed pending submission of terminal disclaimer.

5. Claim 5 is objected to because of the following informalities: there is no period at the end of the claim, as cited in prior office action, which was mailed on 1/19/2006. Appropriate correction is required.

### *Claim Objections*

6. Claim 5 is objected to because of the following informalities: there is no period at the end of the claim. Appropriate correction is required.

### *Double Patenting*

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., In re Berg, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); In re Goodman, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); In re Longi, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); In re Van Ornum, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); In re Vogel, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and In re Thorington, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

7. Claims 1-13, 15-25 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-5, 8-12, 16-23, 25-30 of U.S. Patent No. 6,766,472. Although the conflicting claims are not identical, they are not patentably distinct from each other because it is well settled that the omission of an element and its function is an obvious expedient if elements perform the same function (In re Karlson, 136 USPQ 184 CCPA 1973).

Claim 1 omits the following element from patented claim 1: whereby a caching scheme is utilized that assumes that a root of memory tables contained in the physical memory data is fixed and does not change after it is initialized.

Claims 2-5 are disclosed as patented claims 2-5, respectively.

Claims 6-10 are disclosed as patented claims 8-12, respectively.

Claims 11 and 19 are disclosed as patented claim 16.

Claims 12-13, 15-18 are disclosed as patented claims 17-18, 20-23, respectively.

Claim 20 is disclosed as patented claim 25.

Claim 21 omits the following element from patented claim 26: debugging a fault that occurred on the target computer by processing the transferred physical memory contents at the host.

Claims 22-25 are disclosed as patented claims 27-30, respectively.

### *Claim Rejections - 35 USC § 102*

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

9. Claims 6-9, 21-25 are rejected under 35 U.S.C. 102(b) as being anticipated by Nesheim et al. U.S. Patent 5,897,664.

As per claim 6, Nesheim teaches a host computing system, comprising: a processor; memory (column 6, lines 50-60); means for establishing a connection between the memory and

memory of a target computer; a data retrieval component configured to transfer address data from memory of the target computer to the memory; an address translation component configured to replicate virtual memory addresses from the address data in the memory (column 7, lines 13-27; column 8, lines 33-43; column 10, lines 8-14), wherein the virtual memory addresses in the host computing system identical to virtual memory addresses of the target computer (column 8, lins 39-44).

As per claim 7, Nesheim teaches the host computing system as recited in claim 6, further comprising cache memory configured to store the replicated virtual memory addresses (column 4, lines 42-47).

As per claim 8, Nesheim teaches the host computing system as recited in claim 6, wherein the host-side address translation component is further configured to validate the replicated virtual memory addresses (column 7, lines 23-28).

As per claim 9, Nesheim teaches the host computing system as recited in claim 6, further comprising a memory management verifier that verifies that a processor of the target computing system has memory management enabled (column 7, lines 1-2).

As per claim 21, Nesheim teaches one or more computer-readable media containing computer-executable instructions that, when executed by a computer, perform the following steps: transferring physical memory data contained of a target computer to a host computer; translating address data contained in the physical memory data to virtual addresses utilized by the target computer (column 7, lines 10-27; column 8, lines 32-50; column 10, lines 8-14), wherein the virtual addresses on the host computer are identical to identical to virtual addresses on the target addresses (column 8, lines 39-44).

As per claim 22, Nesheim teaches the one or more computer-readable media as recited in claim 21, further comprising computer-executable instructions that, when executed by a computer, perform the following steps: locating address data in the physical memory of the target computer; and transferring only the address data to the host computer (column 7, lines 23-27).

As per claim 23, Nesheim teaches the one or more computer-readable media as recited in claim 21, further comprising computer-executable instructions that, when executed by a computer, caches data transferred from the target computer on the host computer (column 4, lines 42-47).

As per claim 24, Nesheim teaches the one or more computer-readable media as recited in claim 21, further comprising computer-executable instructions that, when executed by a computer, validating the transferred data to determine if the transferred data is identical to the contents of the physical memory (column 7, lines 18-27).

As per claim 25, Nesheim teaches the one or more computer-readable media as recited in claim 21, further comprising computer-executable instructions that, when executed by a computer, determining if memory management is enabled on a processor in the target computer prior to transferring data (column 7, lines 1-2; column 10, lines 8-14; column 9, lines 7-11).

### *Claim Rejections - 35 USC § 103*

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

11. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nesheim in view of Brandewie U.S. Patent 6,094,530.

As per claim 10, Nesheim teaches the host computing system as recited in claim 6, wherein the means for establishing a connection between the memory and memory of a target computer (column 6, lines 51-53). Nesheim does not teach wherein the connection comprises hardware-assisted debug probes. Brandewie does teach wherein the connection comprises hardware-assisted debug probes (column 2, lines 17-39). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the debugging process of Brandewie in the process of Nesheim. One of ordinary skill in the art would have been motivated to use the debugging process of Brandewie in the process of Nesheim because Brandewie teaches the benefit of replicating data locally from a remote source wherein the remote data could be in non-contiguous regions of memory (column 3, lines 9-12) and still have up-to-date replication on the local host to ensure coherency (column 2, lines 63-65); this is an explicit desire of Nesheim in that coherency is important in the replication (column 7, lines 13-27) and non-contiguous ranges replication from the remote node are also desired in the virtual memory transfer system of Nesheim (column 10, lines 50-56).

### *Allowable Subject Matter*

12. Claims 1-5, 11-13, and 15-20 are allowed.

***Response to Arguments***

13. Applicant's arguments filed 1/26/06 have been fully considered but they are not persuasive.

With respect to claims 1, and 21, the applicant has amended the claims to include the allowable subject matter of former claim 14. However, the applicant has changed the amended matter to claims 6 and 21 to include only the virtual addresses and not the data of the virtual addresses. In column 8, lines 39-44, Neishem teaches wherein the same addresses of each node does not contain the same data; however, Neishem does teach comparing virtual addresses of each node. Since each virtual address is compared, then the same addresses must exist on both nodes. Therefore, the amendment of the addresses being the same stands rejected.

***Conclusion***

14. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher S. McCarthy whose telephone number is (571)272-3651. The examiner can normally be reached on M-F, 9 - 5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Beausoliel can be reached on (571)272-3645. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

csm
February 2, 2006

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